

Notice of Allowability**Application No.**

10/750,029

Examiner

KENNETH LAM

Applicant(s)

PARK ET AL.

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 03/18/2010.
2. ☒ The allowed claim(s) is/are 1, 2, 4-7, 9-11.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying Indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date ____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 06/08/2010.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other ____.

/KENNETH LAM/
Examiner, Art Unit 2611

DETAILED ACTION

Request for Continued Examination

1. The request filed on 03/18/2010 for a Request for Continued Examination (RCE) under 37 CFR 1.114 based on parent Application No. 10/750029 is acceptable and a RCE has been established. An action on the RCE follows.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Eric Hyman on 06/08/2010.

The application has been amended as follows:

In claims:

1) In Claim 1, replace with the following:

1. An on-channel repeating apparatus for an Advanced Television System Committee (ATSC) terrestrial digital TV broadcasting service, in which a terrestrial digital television broadcast signal is repeated over an on-channel, the on-channel repeating apparatus comprising:

a receiving unit for receiving a Radio Frequency (RF) broadcast signal from a main transmitter;

a frequency downlink converting unit for converting the received RF broadcast signal into an intermediate frequency (IF) signal based on a first reference frequency;

a demodulating unit for converting the converted IF signal into a baseband signal;

an equalizing unit for removing a predetermined signal generated between the main transmitter and the on-channel repeater from the converted baseband signal, wherein the predetermined signal includes a noise signal and a multi-path signal generated due to a transmission channel between the main transmitter and the on-channel repeating apparatus, and a feedback signal generated due to low isolation of transmission or reception antennas;

a modulating unit for converting the baseband signal received directly from the equalizing unit, into an IF signal;

a frequency uplink converting unit for converting the IF signal into a RF broadcast signal based on a second reference frequency;

a high power amplifying unit for amplifying and repeating the converted RF broadcast signal;

a transmitting unit for transmitting the RF broadcast signal outputted from the high power amplifying unit; and

a signal synchronizing unit for generating the first reference frequency to provide the generated first reference frequency for the IF downlink converting unit to the

demodulating unit which shifts the IF signal to the baseband signal, and generating the second reference frequency based on the first reference frequency to provide the generated second reference frequency for the

2) In Claim 3, cancel Claim 3.

3) In Claim 7, replace with the following:

7. An on-channel repeating method of an on-channel repeater, the on-channel repeating method comprising the steps of:

a) receiving a Radio Frequency (RF) broadcast signal from a main transmitter to convert the received RF broadcast signal into an intermediate frequency (IF) signal based on a first reference frequency;

b) converting the downlink-converted IF signal into a baseband signal, and removing a certain predetermined signal generated between a main transmitter and the on-channel repeater, from the converted baseband signal, wherein the predetermined signal includes a noise signal and a multi-path signal generated due to a transmission channel between the main transmitter and the on-channel repeater, and a feedback signal generated due to low isolation of transmission or reception antennas;

c) at the time of transmission, converting the baseband signal without the predetermined signal directly into an IF signal, and then converting the converted IF signal into a RF broadcast signal based on the second reference frequency based on

the first reference frequency so as to perform a frequency and phase synchronization with the received broadcast signal; and

d) amplifying and transmitting the uplink-converted RF broadcast signal.

4) In Claim 8, cancel Claim 8.

5) In Claims 12-32, cancel Claims 12-32.

Allowable Subject Matter

3. Claims 1, 2, 4-7, 9-11 are allowed.

Claims 1 and 7 which recite the apparatus and its method of an on-channel repeater for an Advance Television System Committee terrestrial digital TV broadcasting service, comprising: a receiving unit, a frequency downlink converting unit, a demodulating unit, an equalizing unit for removing a predetermined signal generated between the main transmitter and the on-channel repeater from the converted baseband signal, wherein the predetermined signal includes a noise signal and a multi-path signal generated due to a transmission channel between the main transmitter and the on-channel repeating apparatus, and a feedback signal generated due to low isolation of transmission or reception antennas, a modulating unit, a frequency uplink converting unit, a high power amplifying unit, a transmitting unit and a signal synchronizing unit, the prior art of record neither anticipate nor render obvious the limitation as claimed, with respect to an on-channel repeating apparatus and its method.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH LAM whose telephone number is (571)270-1862. The examiner can normally be reached on Mon - Fri 8:00 am - 4:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on (571) 272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KENNETH LAM/
Examiner, Art Unit 2611
05/21/2010
/Shuwang Liu/
Supervisory Patent Examiner, Art Unit 2611